

REMARKS

The Office Action has been carefully reviewed. No claim is allowed. Claim 1 presently appears in this application and defines patentable subject matter warranting its allowance. Reconsideration and allowance are hereby respectfully solicited.

Claim 1 has been rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for the enzyme of SEQ ID NO:1 or enzymes encoded by genes which will hybridize to SEQ ID NO:2 under specific conditions, does not reasonably provide enablement for any enzyme with the claimed properties. This rejection is respectfully traversed.

Claim 1 is now amended to recite a purified recombinant thermostable enzyme which has the amino acid sequence of a variant of SEQ ID NO:1. Thus, applicants believe that the presently claimed recombinant thermostable enzyme does not read on all enzymes which have an amino acid sequence not identical to SEQ ID NO:1 but rather reads only on those variants of SEQ ID NO:1 which are obtainable from SEQ ID NO:1 by recombinant DNA technology and which have the recited physiochemical properties. The amendment to claim 1 is fully supported by the specification at pages 26-28.

Applicants submit that it would be routine experimentation for one of skill in the art to obtain variants of SEQ ID NO:1 using recombinant DNA technology and to screen the variants to determine if they have the physicochemical properties recited in claim 1.

In re Appln. No. 09/419,305
Confirmation No.: 1033

Reconsideration and withdrawal of this rejection are
therefore respectfully requested.

In view of the above, amended claim 1 complies with 35
U.S.C. §112 and defines patentable subject matter warranting
their allowance. Favorable consideration and early allowance are
earnestly urged.

Respectfully submitted,

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"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

Claim 1 has been amended as follows:

1(Amended). A purified recombinant thermostable enzyme which has an amino acid sequence of a variant of SEQ ID NO:1, said amino acid sequence being obtainable from SEQ ID NO:1 by recombinant DNA technology, and which has the following physicochemical properties:

(1) Action

Forming non-reducing saccharides having a trehalose structure as an end unit and having a degree of glucose polymerization of at least 3 from ~~maltotetraose~~ or reducing amylaceous saccharides having a degree of glucose polymerization of at least 3;

(2) Molecular weight

About 69,000-79,000 daltons on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE);

(3) Isoelectric point (pI)

About 5.4-6.4 on isoelectrophoresis;

(4) Thermostability

Substantially not inactivated even when incubated in an aqueous solution (pH 7.0) at 85°C for 60 min.; and

(5) ~~Amino~~ Partial amino acid sequence

~~An amino acid sequence which is not identical to
SEQ ID NO:1 but which has physicochemical
properties of (1) to (4) inherent to a
thermostable enzyme of SEQ ID NO:1, said amino
acid sequence comprising~~Having an amino acid
sequence of at least two contiguous amino acid
residues in SEQ ID NO:3 and/or SEQ ID NO:4 and
being encoded by a chromosomal DNA which
hybridizes to a probe having the nucleotide
sequence of 5'-AAYYTNTGGTAYTTYA ARG-3' (SEQ ID
NO:7) and a probe having the nucleotide sequence
of 5'-GARGARTGGCAYWSNATHAT-3' (SEQ ID NO:8).